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Step IV assembling, from said monomer sequences manufactured in Step III, for each rule of said set of rules R of G an oligomer representing that rule;

Step V linking said oligomers assembled in Step IV to information-carrying polymers coding words of said regular grammar G.

Please replace claim 2 with the following amended version:

2. (Amended) The method according to claim 1, wherein said terminal alphabet Σ of a grammar G contains terminals 0 and 1, n start terminals s (s_0, s_1, \dots, s_n) and m end terminals e (e_0, e_1, \dots, e_m), wherein n and m are integers larger than or equal to 0.

Please replace claim 3 with the following amended version:

3. (Amended) The method according to claim 1, wherein said monomer sequence constructed in Step III includes nucleotides.

Please replace claim 4 with the following amended version:

4. (Amended) The method according to claim 3, wherein said monomer sequence constructed in Step III includes protein recognition sequences.

Please replace claim 5 with the following amended version:

5. (Amended) The method according to claim 1, wherein said synthesis of said monomer sequences in Step II and III is carried out in vitro.

Please replace claim 6 with the following amended version:

6. (Amended) The method according to claim 1, wherein said information-carrying polymers obtained in Step V are ligated into cloning vectors; competent cells are transformed with these vectors; and the transformed cells are selected according to selection markers.

Please replace claim 7 with the following amended version:

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7. (Amended) The method according to claim 1, further comprising obtaining one pair of anti-sense primers, each of said primers is mixed into at least n-1 solutions containing said information-carrying polymer, wherein n is the number of oligomers contained as elongators in said polymer; carrying out at least n-1 PCR approaches, wherein n is the number of oligomers contained as elongators in said polymer, and one primer of each pair primes in the terminator opposite to the elongator and the other primer primes in the elongator itself; obtaining polymer fragments by PCR, wherein said polymer fragments are separated by length using electrophoresis; and optically reading out a pattern obtained by electrophoresis.

Please replace claim 8 with the following amended version:

8. (Amended) The method according to claim 7, wherein said reading out of said pattern is performed automatically with a scanner or a sequencing machine.

Please replace claim 9 with the following amended version:

9. (Amended) Information-carrying polymers produced by the steps comprising:
defining a regular grammar $G = (\Sigma, V, R, S)$ with a finite terminal alphabet Σ , a finite set of variables V , a finite set of rules R , and a start symbol S ;
being the NFR method (Niehaus-Feldkamp-Rauhe method) for producing monomer sequences;
implementing, with the NFR method, a grammar as previously defined, by producing with the NFR method monomer sequences that unambiguously represent said set of rules R of a grammar G ;
assembling, from said monomer sequences manufactured as defined, for each rule of said set of rules R of G an oligomer representing that rule;
linking said oligomers assembled in Step IV to information-carrying polymers coding words of said regular grammar G .

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Please replace claim 10 with the following amended version:

10. (Amended) A random number generator comprising information-carrying polymers.

Please replace claim 11 with the following amended version:

11. (Amended) The information-carrying polymers of claim 9, wherein the polymers comprise part of a polymeric data storage.

Please replace claim 12 with the following amended version:

12. (Amended) The information-carrying polymers of claim 9, wherein the polymers comprise part of a DNA computer.

Please replace claim 13 with the following amended version:

13. (Amended) The information-carrying polymers of claim 9, wherein the polymers comprise part of a biochip.

Please replace claim 14 with the following amended version:

14. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used to manufacture molecular weight standards.

Please replace claim 15 with the following amended version:

15. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used to represent data structures.

Please replace claim 16 with the following amended version:

16. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used as markers or signatures.

Please replace claim 17 with the following amended version:

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17. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used for the purpose of quality assurance.

Please replace claim 18 with the following amended version:

18. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used for the purpose of forgery protection.

Please replace claim 19 with the following amended version:

19. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used for the purpose of labeling genetically engineered products.

Please replace claim 20 with the following amended version:

20. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used for the purpose of labeling food.

Please replace claim 21 with the following amended version:

21. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used for the purpose of labeling organisms.

Please replace claim 22 with the following amended version:

22. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used for the purpose of labeling chemical products.

Please replace claim 23 with the following amended version:

23. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used for the purpose of labeling medical and pharmaceutical products.

Please replace claim 24 with the following amended version:

24. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used for the purpose of labeling documents.

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Please replace claim 25 with the following amended version:

25. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used for the purpose of labeling money.

Please replace claim 26 with the following amended version:

26. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used for the purpose of labeling objects and machinery.

Please replace claim 27 with the following amended version:

27. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used for the purpose of labeling liquids, solutions, suspensions, or emulsions.

Please replace claim 28 with the following amended version:

28. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used to encrypt information.

Please replace claim 29 with the following amended version:

29. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used for the purpose of authenticating persons and objects.

Please replace claim 30 with the following amended version:

30. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used as molecular-scale adhesives.

Please replace claim 31 with the following amended version:

31. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used to manufacture or process molecular structures.

Please replace claim 32 with the following amended version:

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32. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used for quality control of synthetically produced oligonucleotides.

Please replace claim 33 with the following amended version:

33. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used to manufacture biochips.

Please replace claim 34 with the following amended version:

34. (Amended) The method according to claim 1, wherein 1- to n-byte nucleic acids are obtained.

Please replace claim 35 with the following amended version:

35. (Amended) The method according to claim 1, wherein, 1- to n-byte biochips are obtained.

Please replace claim 36 with the following amended version:

36. (Amended) The information-carrying polymers of claim 9, wherein the polymers comprise part of biochips, wherein said biochips are used for data storage.

Please replace claim 37 with the following amended version:

37. (Amended) The information-carrying polymers of claim 9, wherein the polymers comprise part of biochips, wherein said biochips are used to manufacture optical display devices or display screens.

Please replace claim 38 with the following amended version:

38. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used to label individual molecules.

Please replace claim 40 with the following amended version:

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40. (Amended) Use of nucleic acids to encrypt information, wherein short nucleic acid sequences are used as a key for decryption.

A2
Please replace claim 41 with the following amended version:

41. (Amended) The information-carrying polymers of claim 9, wherein the polymers are used to encrypt information, wherein the information-carrying polymer is concealed in a multitude of other polymers.

Please replace claim 42 with the following amended version:

42. (Amended) Use of polymers for the purpose of labeling, wherein the polymers are encrypted.

A3
Please cancel claim 43 without prejudice.

Please replace claim 45 with the following amended version:

45. (Amended) The information-carrying polymers of claim 9, wherein the polymers are read using biochips.

A4
Please add new claims 48-53 as follows:

-- 48. (New) The method according to claim 1, wherein said monomer sequence constructed in Step III includes ribonucleotides. --

-- 49. (New) The method according to claim 1, wherein said monomer sequence constructed in Step III includes deoxyribonucleotides. --

-- 50. (New) The method according to claim 4, wherein said protein recognition sequences are selected from the group consisting of restriction cut sites, protein binding sites, and stop codons. --